

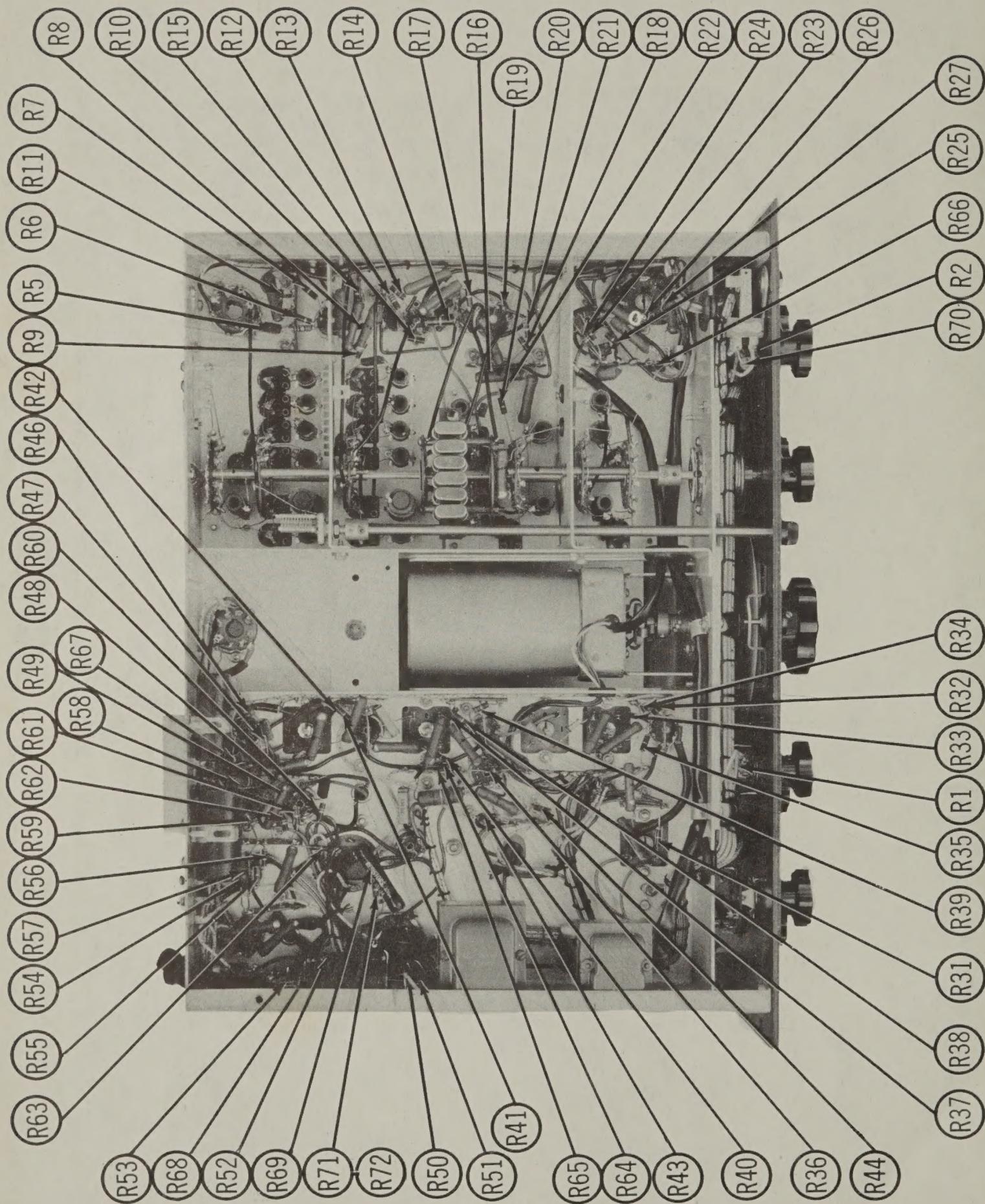
TRADE NAME	Collins Model 75A-2	
MANUFACTURER	Collins Radio Co., Cedar Rapids, Iowa	
TYPE SET	AC Operated Multi-band Superheterodyne Communications Receiver	
TUBES	Seventeen	
POWER SUPPLY	110-120 Volts AC - 60 Cycle	
RATING	.840 Amp @ 117 Volts AC	
FREQ. RANGES	BAND	FREQ.
	160 Meters	1.5 - 2.5 MC
	80 Meters	3.2 - 4.2 MC
	40 Meters	6.8 - 7.8 MC
	20 Meters	14.0 - 15.0 MC
	15 Meters	20.8 - 21.8 MC
	11 Meters	26.0 - 28.0 MC
	10 Meters	28.0 - 30.0 MC

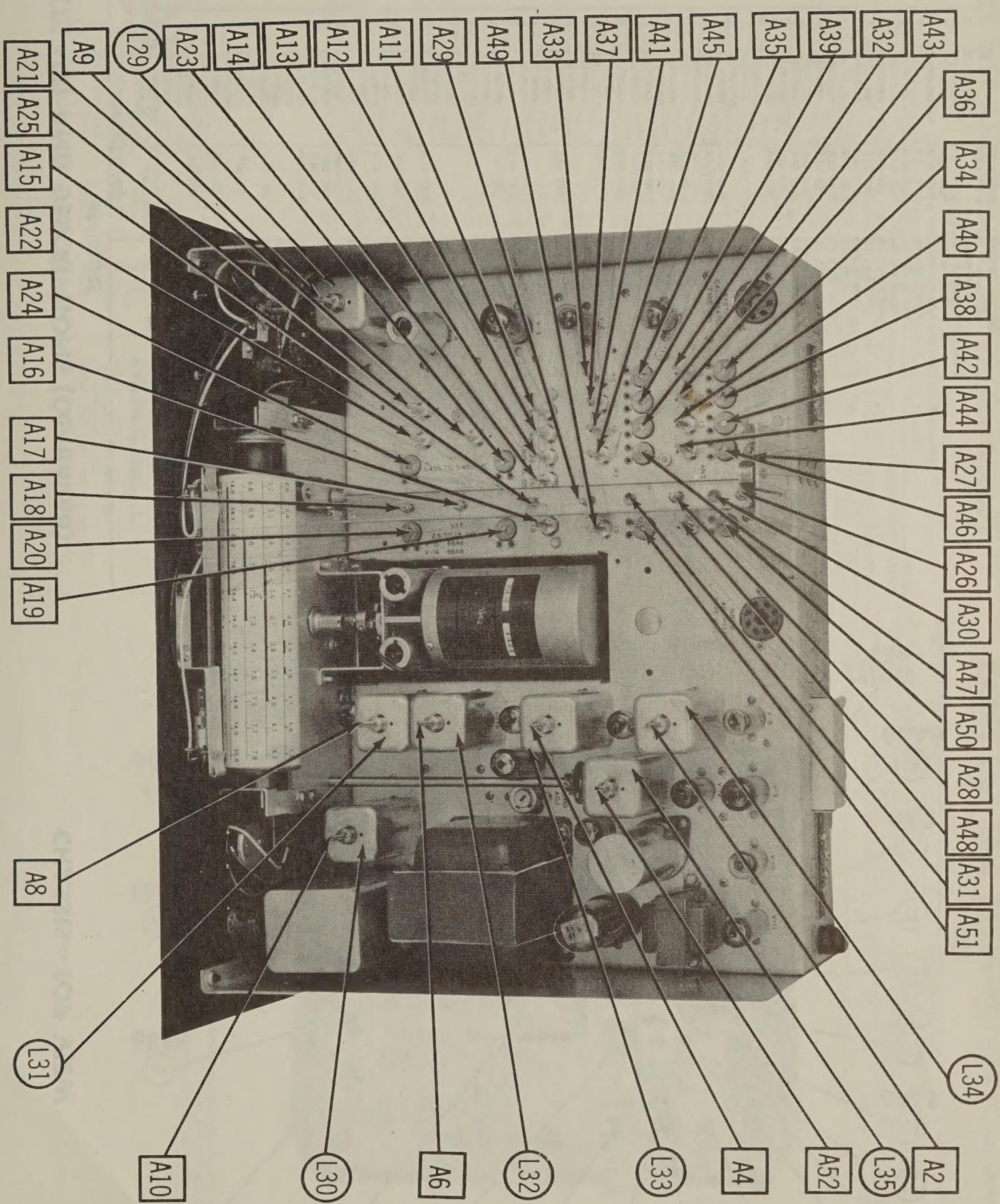
HOWARD W. SAMS &amp; CO., INC. • Indianapolis 5, Indiana

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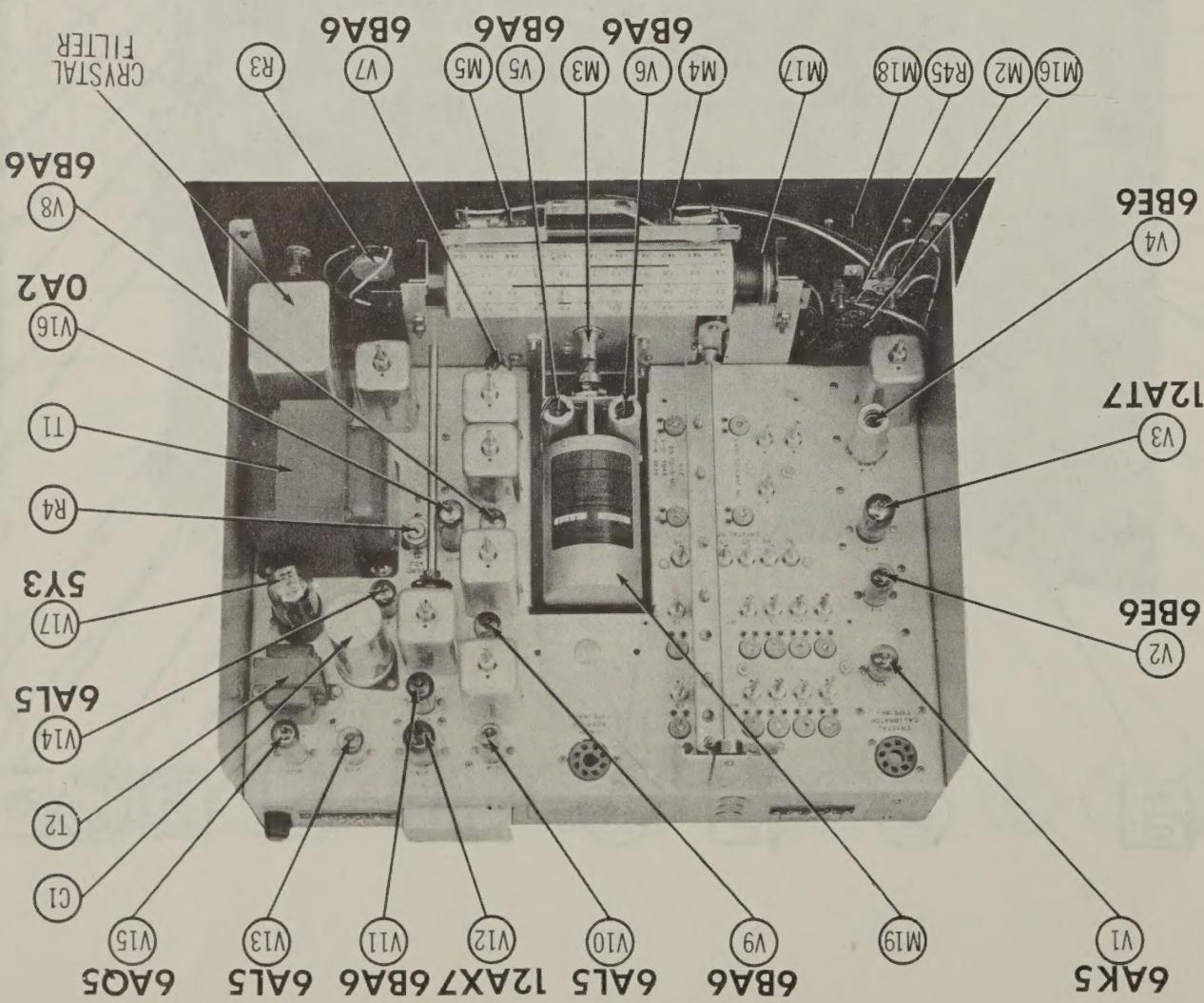


## PARTS LIST AND DESCRIPTIONS (continued)

### CHASSIS—TOP VIEW

#### RESISTORS

ITEM No.	RATING	REPLACEMENT DATA		IDENTIFICATION CODES
		COLLINS PART No.	IRC PART No.	
R5	1Meg	745121200		RF Amp. Grid
R6	1Meg	745121200		RF Amp. Grid
R7	120Ω	745104800	BTS-120	RF Amp. Cathode
R8	33KΩ	745114900	BTS-2200	RF Amp. Screen
R9	220Ω	745101000		RF Amp. Plate Decoupling
R10	47Ω	745103000		Parasitic Suppressor
R11	10KΩ	745112800	BTS-10K	AVC Network
R12	470KΩ	745119800		1st. Mixer Grid
R13	56Ω	745107600	BTS-330	1st. Mixer Cathode
R14	10KΩ	745112800	BTS-560	1st. Mixer Screen
R15	22KΩ	745114200		1st. Mixer Injection Grid
R16	220Ω	745100000	BTS-2200	1st. Mixer Plate Decoupling
R17	33Ω	745106500	BTS-330	Osc. Cathode
R18	33Ω	745106500	BTS-330	Osc. Cathode
R19	4700Ω	75411400	BTS-4700	Osc. Grid
R20	2200Ω	745103000	BTS-2200	Parasitic Suppressor
R21	47Ω	745108600	BTA-1000	Decoupling
R22	100KΩ	745117000	BTS-470	2nd. Mixer Injection Grid
R23	100KΩ	745107200	BTS-470	2nd. Mixer Cathode
R24	47Ω	745112800	BTS-470	2nd. Mixer Screen
R25	33KΩ	745114900	BTS-4700	2nd. Mixer Plate Decoupling
R26	2200Ω	745105100	BTS-2200	2nd. Mixer Transformer Shunt
R27	100KΩ	745117000	BTS-2200	Selectivity Network
R28	33KΩ	745114900	BTS-150	Selectivity Network
R29	47KΩ	74511800	BTS-150	2nd. Mixer Cathode
R30	150Ω	745119300	BTS-150	1st. IF Amp. Cathode
R31	10KΩ	745112800	BTS-100	1st. IF Amp. Plate Decoupling
R32	15Ω	745105100	BTS-100	1st. IF Amp. Screen
R33	2200Ω	745101000	BTS-2200	Voltage Divider
R34	47Ω	745116300	BTS-2200	2nd. IF Amp. Grid
R35	68KΩ	745116300	BTS-2200	2nd. IF Amp. Plate Decoupling
R36	10KΩ	745112800	BTS-2200	2nd. IF Amp. Screen
R37	2200Ω	745110000	BTS-150	3rd. IF Amp. Cathode
R38	22KΩ	745114200	BTS-100	3rd. IF Amp. Screen
R39	68KΩ	745105100	BTS-100	Meter Shunt
R40	10KΩ	745104400	BTS-100	AVC Diode Load
R41	47KΩ	745117000	BTS-100K	3rd. IF Amp. Screen
R42	2200Ω	745115000	BTS-2200	3rd. IF Amp. Plate Decoupling
R43	150Ω	745105100	BTS-150	3rd. IF Amp. Cathode
R44	100Ω	745104400	BTS-100	Meter Shunt
R45	100Ω	745104400	BTS-100	AVC Filter
R46	100KΩ	745117000	BTS-100K	AVC Amp. Cathode
R47	470KΩ	745119800	BTS-470K	Bias Network
R48	120KΩ	745117400	BTS-120K	Bias Network
R49	100KΩ	745117000	BTS-100K	Bias Network
R50	2200Ω	745100000	BTS-2200	Bias Network
R51	100Ω	745504400	1 3/4A-350	Bias Network
R52	350Ω	745135020	1 3/4A-350	Bias Network
R53	120Ω	745504800	1 3/4A-350	Bias Network
R54	47KΩ	745115600	1 3/4A-350	Diode Det. Load
R55	47KΩ	745115600	1 3/4A-350	Diode Det. Load
R56	470KΩ	745118000	1 3/4A-350	BFO Filter
R57	470KΩ	745119800	1 3/4A-350	Diode Filter
R58	6800Ω	745112100	1 3/4A-350	AF Amp. Cathode
R59	220KΩ	745118400	1 3/4A-350	AF Amp. Plate
R60	150KΩ	745117700	1 3/4A-350	BFO Grid
R61	33KΩ	745114900	1 3/4A-350	BFO Screen
R62	100KΩ	745117000	1 3/4A-350	BFO Plate
R63	10KΩ	745112800	1 3/4A-350	BFO Decoupling
R64	220KΩ	745118400	1 3/4A-350	Voltage Divider
R65	10KΩ	745112800	1 3/4A-350	BTS-220K
R66	220Ω	745117700	1 3/4A-350	BTS-10K
R67	68KΩ	745116300	1 3/4A-350	BTS-220K
R68	100KΩ	745117000	1 3/4A-350	BTS-68K
R69	2500Ω	745003000	1 3/4A-350	BTS-100K
R70	10Ω	745502000	1 3/4A-350	Output Grid
R71	3900Ω	745502000	1 3/4A-350	Voltage Regulator Plate
R72	3900Ω	745502000	1 3/4A-350	Phone Shunt
		BTB-3900	1 3/4A-350	Bias Network
		BTB-3900	1 3/4A-350	Bias Network



## PARTS LIST AND DESCRIPTIONS (Continued)

## FUSES

Capacity values given in the rating column are in mfd for Electrolytic

ITEM No.	REPLACEMENT DATA			IDENTIFICATION CODES					
	RATING CAP.	VOLT	COLLINS PART No.	AEROVox PART No.	CENTRALAB PART No.	CORNELL- DUBUKE PART No.	ERIE PART No.	SPRAGUE PART No.	INSTALLATION NOTES
C40	10000		913056600	SIU0000	D6-103	TM55I	GP2-333-103	5HK-SI	2nd. Mixer Screen
C41	10000		913056600	SIU0000	D6-103	TM55I	GP2-333-103	5HK-SI	2nd. Mixer-Cathode
C42	10000		913056600	SIU0000	D6-103	TM55I	GP2-333-103	5HK-SI	RF Bypass
C43	10000		913056600	SIU0000	D6-103	TM55I	GP2-333-103	5HK-SI	RF Bypass
C44	10	500	912043200	SIU0000	1469-00001	5R5QJ	GP2-333-103	5HK-SI	RF Bypass
C45	10000		913056600	SIU0000	D6-103	TM55I	GP2-333-103	5HK-SI	RF Bypass
C46	10000		913056600	SIU0000	D6-103	TM55I	GP2-333-103	5HK-SI	RF Bypass
C47	10000		913056600	SIU0000	D6-103	TM55I	GP2-333-103	5HK-SI	RF Bypass
C48	5		916438500	SI5NP0	TCZ-4-7	NP0K-050	NP0K-050	5HK-SI	RF Bypass
C49	5		916438500	SI5NP0	TCZ-4-7	NP0K-050	NP0K-050	5HK-SI	RF Bypass
C50	5		916438500	SI5NP0	TCZ-4-7	NP0K-050	NP0K-050	5HK-SI	RF Bypass
C51	10000		913056600	SIU0000	D6-103	TM55I	GP2-333-103	5HK-SI	RF Bypass
C52	10000		913056600	SIU0000	D6-103	TM55I	GP2-333-103	5HK-SI	RF Bypass
C53	10000		913056600	SIU0000	D6-103	TM55I	GP2-333-103	5HK-SI	RF Bypass
C54	10	500	912043200	SIU0000	1468-00001	5W5QJ	GP2-333-103	5HK-SI	RF Bypass
C55	10000		913056600	SIU0000	D6-103	TM55I	GP2-333-103	5HK-SI	RF Bypass
C56	10000		913056600	SIU0000	D6-103	TM55I	GP2-333-103	5HK-SI	RF Bypass
C57	10000		913056600	SIU0000	D6-103	TM55I	GP2-333-103	5HK-SI	RF Bypass
C58	.1		918023900	PI2P1	DF-104	2TM-P1	2TM-P1	5HK-SI	RF Bypass
C59	10	500	912043200	PI2P1	DF-104	2TM-P1	2TM-P1	5HK-SI	RF Bypass
C60	100		912049500	PI2P1	DF-104	2TM-P1	2TM-P1	5HK-SI	RF Bypass
C61	100		912049500	PI2P1	DF-104	2TM-P1	2TM-P1	5HK-SI	RF Bypass
C62	10000		913056600	SIU0000	D6-103	TM55I	GP2-333-103	5HK-SI	RF Bypass
C63	10000		913056600	SIU0000	D6-103	TM55I	GP2-333-103	5HK-SI	RF Bypass
C64	10	500	912043200	PI2P1	DF-104	2TM-P1	2TM-P1	5HK-SI	RF Bypass
C65	.1		913033300	PI2P1	DF-104	2TM-P1	2TM-P1	5HK-SI	RF Bypass
C66	10000		913056600	SIU0000	D6-103	TM55I	GP2-333-103	5HK-SI	RF Bypass
C67	.1	200	913033300	PI2P1	DF-104	2TM-P1	2TM-P1	5HK-SI	RF Bypass
C68	.330	500	912053300	PI2P1	DF-104	2TM-P1	2TM-P1	5HK-SI	RF Bypass
C69	.1	200	913033300	PI2P1	DF-104	2TM-P1	2TM-P1	5HK-SI	RF Bypass
C70	10000		913056600	SIU0000	D6-103	TM55I	GP2-333-103	5HK-SI	RF Bypass
C71	100	500	912049500	PI2P1	DF-104	2TM-P1	2TM-P1	5HK-SI	RF Bypass
C72	.5	200	913016500	PI2P1	DF-104	2TM-P1	2TM-P1	5HK-SI	RF Bypass
C73	10000		913056600	SIU0000	D6-103	TM55I	GP2-333-103	5HK-SI	RF Bypass
C74	10000		913056600	SIU0000	D6-103	TM55I	GP2-333-103	5HK-SI	RF Bypass
C75	100	500	912049500	PI2P1	DF-104	2TM-P1	2TM-P1	5HK-SI	RF Bypass
C76	10000		913056600	SIU0000	D6-103	TM55I	GP2-333-103	5HK-SI	RF Bypass
C77	.1	150	913023900	PI2P1	DF-104	2TM-P1	2TM-P1	5HK-SI	RF Bypass
C78	10000		913056600	SIU0000	D6-103	TM55I	GP2-333-103	5HK-SI	RF Bypass
C79	.5	600	913023900	PI2P1	DF-104	2TM-P1	2TM-P1	5HK-SI	RF Bypass
C80	.1	150	913023900	PI2P1	DF-104	2TM-P1	2TM-P1	5HK-SI	RF Bypass
C81	10000		913056600	SIU0000	D6-103	TM55I	GP2-333-103	5HK-SI	RF Bypass

† Some Models use 47MMF in this application (Part No. 912047000)

## CONTROLS

ITEM No.	RATING	REPLACEMENT DATA			INSTALLATION NOTES				
		COLLINS PART No.	IRC. PART No.	CLAROSTAT PART No.					
R1A B	RESIST- ANCE WATTS	50KΩ	$\frac{1}{2}$	376-4499-00	Q13-133	AG-60-Z	RS-2	B-60	Audio Gain Control Attach to R1A per instructions
R2A B	Shaft	10KΩ	$\frac{1}{2}$	Not Req.	376-3522-00	Q11-116	AM-27-S	B-14	RF Gain Control Attach to R2A per instructions
R3A B	Shaft	10KΩ	$\frac{1}{2}$	Not Req.	376-4022-00	Q14-116	RS-2	B-17	CW Limiter Control Attach to R3A per instructions
R4	Shaft	100Ω	1	Not Req.	377-0122-00	Not Req.	AM-30-V	Not Req.	"S" Meter Zero Adjustment Control - Wire Wound

MISCELLANEOUS

# PARTS LIST AND DESCRIPTIONS

## TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	NOTES
		COLLINS PART No.	STANDARD REPLACEMENT		
V1	RF Amplifier	257 0040 00	6AK5	TBD	
V2	1st. Mixer	257 0048 00	6BR8	TCH	
V3	Crystal Osc.	255 0205 00	12AT7	9A	
V4	2nd. Mixer	257 0048 00	6BE6	TCH	
V5	VF Oscillator	255 0185 00	6BA6	TBK	
V6	Buffer	255 0185 00	6BA6	TBK	
V7	1st. IF Amplifier	255 0185 00	6BA6	TBK	
V8	2nd. IF Amplifier	255 0185 00	6BA6	TBK	
V9	3rd. IF Amplifier	255 0185 00	6BA6	TBK	
V10	Detector-AVC	255 0018 00	6AL5	6BT	
V11	Rectifier	255 0185 00	6BA6	TBK	
V12	AVC Amplifier*	255 0201 00	12AX7	9A	
V13	AF Amplifier	257 0018 00	6AL5	6BT	
V14	Noise Limiter	257 0018 00	6AL5	6BT	
V15	C-W Noise Limiter	257 0018 00	6AL5	6BT	
V16	Audio Output	255 0195 00	6A2	7BZ	
V17	Volt. Regulator	257 0252 00	5Y3GT	5BT	
V18	Rectifier	255 0157 00			

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	COLLINS PART No.	AEROVOX PART No.	REPLACEMENT DATA		SRRAGUE PART No.	NOTES
				PR1.	SEC. 1	SEC. 2	SEC. 3
C1A	40	450	18310900	AFFH2-57	PRB150/50	PRB150/20	TVL-2764
C1B	40	450	183104500				
C2	20	150	183104200				
C3	20	150	183104200				
C4	390	500	912053500				
C5	650	500	912054800				
C6	270	500	912052400				
C7	120	500	912050100				
C8	68	500	912048300				
C9	100	600	912049500				
C10	10000	913056600	SD10000	DB-103	TM5SI	GP2-333-103	L3
C11	10000	913056600	SD10000	DB-103	TM5SI	GP2-333-103	L4
C12	10000	913056600	SD10000	DB-103	TM5SI	GP2-333-103	L5
C13	650	500	912054800				
C14	270	500	912052400				
C15	120	500	912050100				
C16	68	500	912048300				
C17	10000	913056600	SD10000	DB-103	TM5SI	GP2-333-103	L6
C18	10	500	912043200				
C19	10000	913056600	SD10000	DB-103	TM5SI	GP2-333-103	L7
C20	10000	913056600	SD10000	DB-103	TM5SI	GP2-333-103	L8
C21	100	500	912049500				
C22	220	500	912051900				
C23	10000	913056600	SD10000	D6-103	TM5SI	GP2-333-103	L9
C24	220	500	912051900				
C25	120	500	912050100				
C26	120	500	912050100				
C27	100	500	912049500				
C28	47	500	912047100	1469-0001	5R5T1	MS-31	L10
C29	39	500	912046500	1469-0005	5R5Q5	MS-44	L11
C30	56	500	912050100	1469-0004	5R5Q4	Fixed Trimmer	L12
C31	10000	913056600	SD10000	D6-103	TM5SI	GP2-333-103	L13
C32	330	500	912053000		5HK-S1	1st. Mixer Plate Dec.	L14
C33	10000	913056600	SD10000	D6-103	TM5SI	GP2-333-103	L15
C34	4	500	916438100		5HK-S1	Fixed Trimmer	L16
C35	1	500	916438100		5HK-S1	Fixed Trimmer	L17
C36	56	500	912053000		5HK-S1	Fixed Trimmer	L18
C37	330	500	912053000		5HK-S1	Fixed Trimmer	L19
C38	270	500	912052400		5HK-S1	Fixed Trimmer	L20
	10000	913056600	SD10000	D6-103	TM5SI	GP2-333-103	L21

# PARTS LIST AND DESCRIPTIONS (Continued)

## TRANSFORMER (POWER)

ITEM No.	RATING	REPLACEMENT DATA		CHICAGO PART No.	NOTES
		COLLINS PART No.	STANCOR PART No.		
T1	117VAC	700VCT	5VAC	6.3VAC @ 5.5A	662-0017-00
	② 84A	110ADC	② 2A		P-3153 ①
					PV-120A ①
					① Drill new mfg. holes

## TRANSFORMER (AUDIO OUTPUT)

ITEM No.	TOTAL DIRECT CURRENT	REPLACEMENT DATA		CHICAGO PART No.	NOTES
		COLLINS PART No.	STANCOR PART No.		
L1	110ADC	10002	668-0020-00	C-2303 ②	C-2994
L2	0.055ADC	27002	5 Henries	C-1706	C-2975
					R-650 ②
					② Drill one new mounting hole

## FILTER CHOKE

ITEM No.	USE	REPLACEMENT DATA		CHICAGO PART No.	NOTES
		DC RES.	COLLINS PART No.		
		PR1.	SEC.		

## COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA		NOTES
		COLLINS PART No.	MERIT PART No.	

## COILS

ITEM No.	USE	REPLACEMENT DATA		NOTES
		COLLINS PART No.	STANCOR PART No.	

ITEM No.	USE	REPLACEMENT DATA		NOTES
		COLLINS PART No.	STANCOR PART No.	

**ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT**

To set the pointer, tune in a station of known frequency and adjust pointer setting on the dial cord to coincide with that frequency on the dial scale. Alignment should be done preferably by one familiar with communications equipment and experienced in their alignment. Certain steps of the alignment require the use of a 100 KC frequency standard with an output range from 1.5 to 30 MC and an accuracy of .001% or better.

**455KC IF ALIGNMENT**

Set Audio gain control at minimum.  
Set RF gain control at maximum.  
Set CW-AM-FM switch to AM position.

**455 KC IF ADJUSTMENT (SLIGHT MISALIGNMENT)**

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
1. .001MFD	High side to Pin 1, (grid) of 6BA6 (V7). Low side to chassis.	455KC (unmod.)	160M	Point of non interference	DC probe to Point $\Delta$ . Common to chassis.	A1, A2 A3, A4 A5, A6 A7, A8	Set Crystal selectivity control to "0." Advance signal generator output to just give a noticeable increase in deflection of VTVM. Adjust A1 through A8 for maximum deflection.
2. "	High side to Pin 7, (Grid) of 6BE6 (V4). Low side to chassis.	see remarks	"	"	"	"	Set crystal selectivity switch to "4" and carefully tune signal generator for maximum deflection on VTVM. Attenuate generator to maintain below 8 volts at Point $\Delta$ . Set crystal selectivity control to "0." Adjust A1 through A9 for maximum deflection.
3. "	"	3KC less than Step 2.	"	"	"	A10	Set crystal selectivity control to "1." Adjust generator output to give 5 volts at Point $\Delta$ . Adjust A10 for maximum deflection.

The knob on the phasing control should be set so that minimum hiss is present when positioned at the center of the scale. Continue with Step 6.

**455 KC IF ADJUSTMENT (LARGE MISALIGNMENT)**

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
1. .001MFD	High side to pin 1, (grid) of 6BA6 (V9). Low side to chassis.	455KC (unmod.)	Any	Point of non-interference.	DC probe to Point $\Delta$ . Common to chassis.	A1, A2	Set crystal selectivity control to "0." Advance signal generator output to just give a noticeable increase in deflection of VTVM. Adjust A1 and A2 for maximum deflection.
2. "	High side to pin 1, (grid) of 6BA6 (V8). Low side to chassis.	"	"	"	"	A3, A4	Adjust for maximum deflection.
3. "	High side to pin 1 (grid) of 6BA6 (V7). Low side to chassis.	"	"	"	"	A5, A6, A7, A8	"
4. "	High side to pin 7 (grid) of 6BE6 (V4). Low side to chassis.	See remarks	"	"	"		Set crystal selectivity control to "4" and carefully tune signal generator for maximum deflection on VTVM. Attenuate generator to maintain below 8 volts at Point $\Delta$ . Set crystal selectivity control to "0." Adjust A1 through A9 for maximum deflection.
5. "	"	3KC less than Step 4.	"	"	"	A10	Set crystal selectivity control to "1." Adjust generator to give 5 volts at Point $\Delta$ . Adjust A10 for maximum deflection.

The knob on the phasing control should be set so that minimum hiss is present when positioned at the center of the scale.

**CRYSTAL OSCILLATOR ADJUSTMENT**

Connect the DC probe of a VTVM through a one meg. isolating resistor to pin 7 of 6BE6 (V2). Place the band switch on 80 meters and adjust A11 for maximum deflection. Successively adjust A12, A13, A14, A15, and A16 for maximum deflection on the corresponding bands of 40, 20, 15, 11 and 10 meters.

The frequency of the crystal oscillator can be adjusted over a limited range by the controls named above (A11 thru A16). After the receiver is aligned this feature may be used to reduce the calibration error between bands.

Couple the receiver to the output of an accurate frequency standard providing 100 KC harmonics.

Tune the receiver to zero beat with 2 MC. Do not turn the tuning dial or BFO pitch control during the remainder of this adjustment. Turn the band switch successively through the remaining bands and adjust the corresponding control in each case (A11, A12, etc.) for zero beat. Detuning of the crystal oscillator will reduce the injection voltage to the first mixer. This effect is usually small. However if the crystal oscillator should stop oscillating because of this adjustment, the zero set control may be used instead, to get exact calibration of that particular band.

**VARIABLE IF ALIGNMENT**

Adjust the front panel controls as follows: OFF-STANDBY-ON switch on "ON," CW-AM-FM switch on "AM," CRYSTAL FILTER SELECTIVITY switch on "0," CRYSTAL FILTER PHASING on line, AUDIO GAIN at maximum.

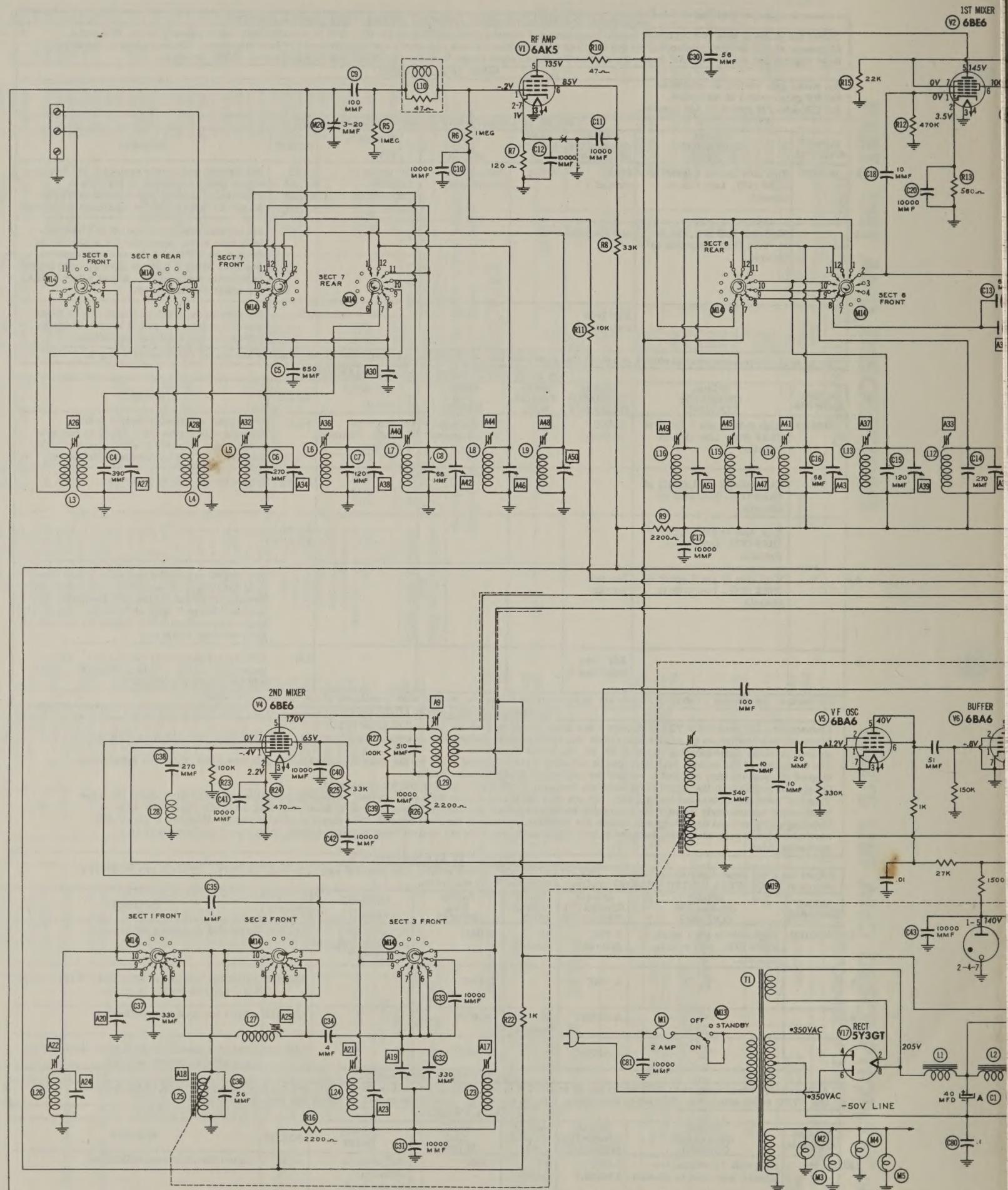
DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
6. .001MFD	High side to pin 1 (grid) of 6BE6 (V2). Low side to chassis.	1.6MC (unmod.)	80 meters	4.1MC	DC probe to Point $\Delta$ . Common to chassis.	A17, A18	Adjust for maximum deflection.
7. "	"	2.4MC	"	3.3MC	"	A19, A20	Adjust for maximum deflection. Repeat steps 6 & 7 until no change is noted.
8. "	"	3.455MC	10 meters	30.0MC	"	A21, A22	Adjust for maximum deflection.
9. "	"	5.455MC	"	28.0MC	"	A23, A24	Adjust for maximum deflection. Repeat steps 8 & 9 until no change is noted.

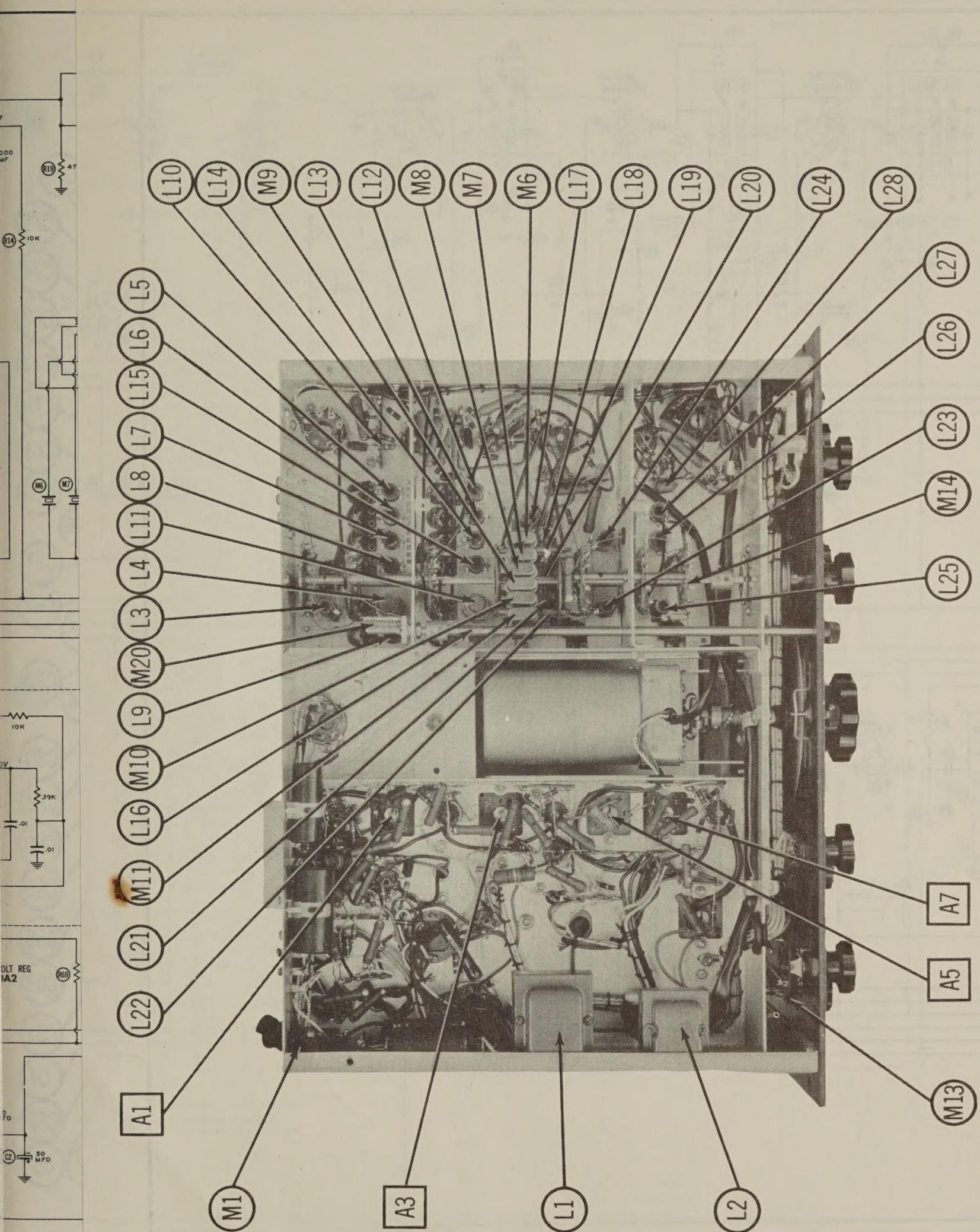
**"TWEET" TRAP ALIGNMENT**

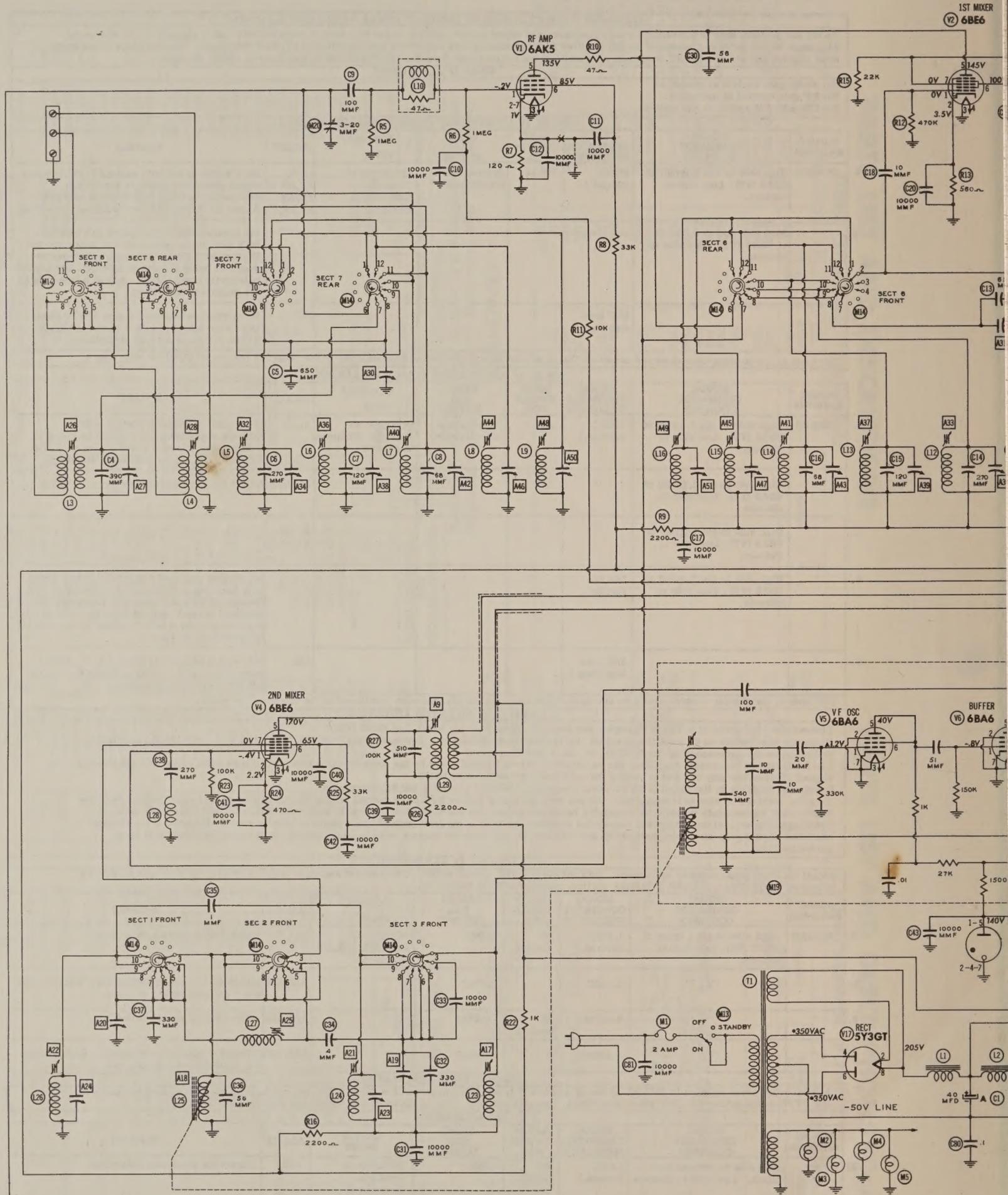
A third order tweet appears at 3533 KC in the 80 meter CW band. This is a result of the 5.7 MC crystal beating with the second harmonic of the VFO at the mixer V4. To reduce this effect, turn on the BFO, tune in the tweet and adjust A25 for minimum tweet.

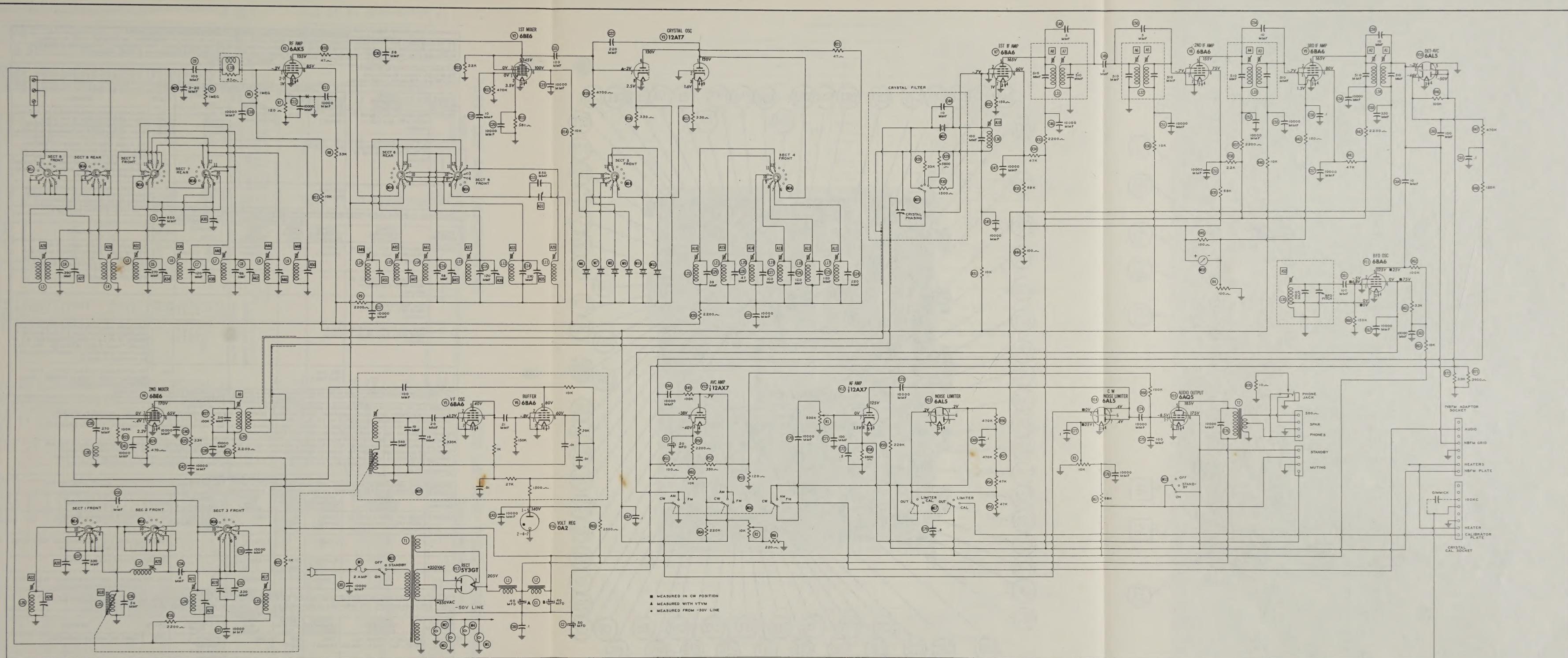
**RF ALIGNMENT**

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
10. Direct	High side to antenna terminal. Low side to chassis.	1.6MC (unmod.)	160 meters	1.6MC	DC probe to Point $\Delta$ . Common to chassis.	A26	Adjust for maximum deflection.
11. "	"	2.4MC	"	2.4MC	"	A27	Adjust for maximum deflection. Repeat steps 10 & 11 until no improvement is noted.
12. "	"	3.3MC	80 meters	3.3MC	"	A28, A29	Adjust for maximum deflection.
13. "	"	4.1MC	"	4.1MC	"	A30, A31	Adjust for maximum deflection. Repeat steps 12 & 13 until no improvement is noted.

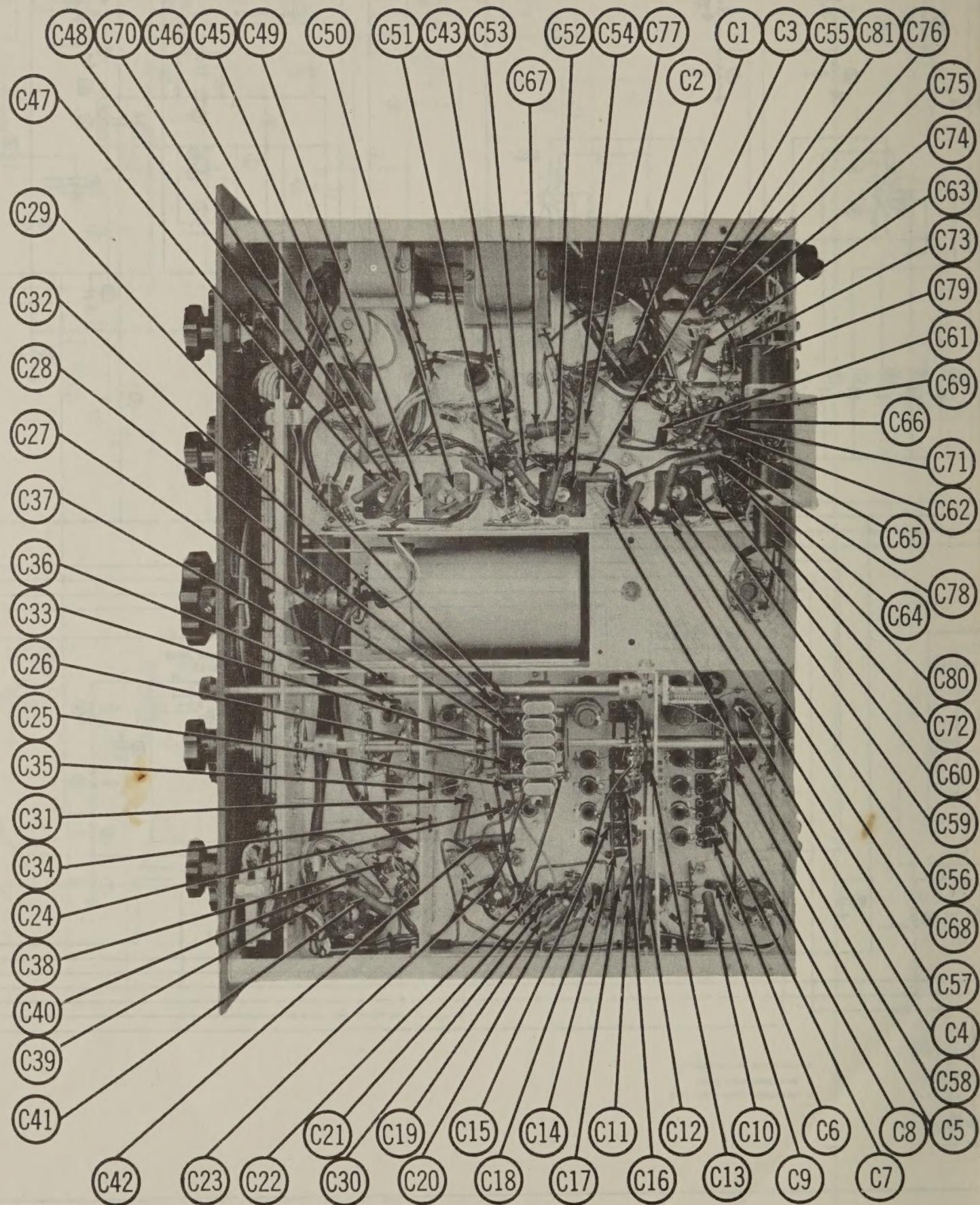








1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of  $\pm 10\%$  in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.



ALIGNMENT INSTRUCTIONS (cont.)

14.	"	"	6.9MC	40 meters	6.9MC	"	A32, A33	Adjust for maximum deflection.
15.	"	"	7.7MC	"	7.7MC	"	A34, A35	Adjust for maximum deflection. Repeat steps 14 & 15 until no improvement is noted.
16.	"	"	14.1MC	20 meters	14.1MC	"	A36, A37	Adjust for maximum deflection.
17.	"	"	14.9MC	20 meters	14.9MC	"	A38, A39	Adjust for maximum deflection. Repeat steps 16 & 17 until no improvement is noted.
18.	"	"	20.9MC	15 meters	20.9MC	"	A40, A41	Adjust for maximum deflection.
19.	"	"	21.7MC	"	21.7MC	"	A42, A43	Adjust for maximum deflection. Repeat steps 18 & 19 until no improvement is noted.
20.	"	"	26.2MC	11 meters	26.2MC	"	A44, A45	Adjust for maximum deflection.
21.	"	"	27.8MC	"	27.8MC	"	A46, A47	Adjust for maximum deflection. Repeat steps 20 & 21 until no improvement is noted.
22.	"	"	28.2MC	10 meters	28.2MC	"	A48, A49	Adjust for maximum deflection.
23.	"	"	29.8MC	"	29.8MC	"	A50, A51	Adjust for maximum deflection. Repeat steps 22 & 23 until no improvement is noted.

VFO ADJUSTMENT

The VFO is carefully adjusted and sealed at the factory and should normally not require further adjustment. If the oscillator drifts beyond a point which can be compensated with the zero set control, tune the receiver to an accurate 2000 KC frequency standard, set the vernier dial corrector to mid-scale, loosen two set screws on the oscillator shaft and turn the oscillator shaft until zero beat is obtained. Make the final adjustment on AM position and selectivity control at 4. Adjust the oscillator shaft for maximum indication on "S" meter and tighten screws without disturbing the setting of the oscillator shaft. Check the tuning rate of the VFO by setting the tuning dial to give zero beat with a frequency standard at each end of one tuning range (14 and 15 MC for instance.) The tuning dial travel between these two points should be 10 turns  $\pm$  3 dial divisions. If the error is greater than this the tuning unit should be removed and returned to the factory for adjustment. After installing the repaired oscillator it will be necessary to align the oscillator with the dial. Carefully turn the oscillator shaft to the clockwise stop. Set the vernier dial at 2 MC on the 160 meter band. Turn the BFO on. Couple a 2000 KC frequency standard to pin 7 of 6BE6 (V4). Rotate the oscillator shaft approximately 5 turns counter clockwise until a tweet is heard in the speaker, then adjust to zero beat. Make the final adjustment with controls at AM and selectivity control at 4. Adjust the oscillator shaft for maximum indication on "S" meter and tighten the set screws on the coupler shaft.

NARROW BAND CONVERSION

This receiver is designed with a band width of 4 KC at 6 db. down and 13 KC at 60 db. down. If extreme selectivity is desired it is possible to convert the 75A-2 receiver to a maximum band width of approximately 2.4 KC at 6 db. down. To convert the set remove the bottom plate and remove the following circuit components: R27, C48, C50 and C54. Repeat alignment as outlined under 455 KC IF ADJUSTMENT (Large Misalignment).

BROAD BAND CONVERSION

Replace the 4 circuit components removed under NARROW BAND CONVERSION. Construct a "swamping tool" consisting of a .01MFID condenser in series with a 1000 ohm resistor and having an alligator clip at each end. Set receiver controls as follows:

- CW-FM-AM control to AM.
- Selectivity control to position 2.
- RF gain to full on.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
24. .001MFID	High side to pin 1, (grid) of 6BE6 (V4). Low side to chassis.	See remarks	Any	Point of non-interference	DC probe to Point A. Common to chassis.	A9	Tune signal generator to frequency of crystal filter (approx. 455KC) as indicated by maximum voltage at Point A. Attenuate generator output to maintain approximately 5 volts at Point A. Adjust A9 for maximum deflection.
25.	"	frequency of crystal filter	"	"	"	A7	Place swamping tool from terminal D of L31 to chassis. Adjust A7 for maximum deflection.
26.	"	"	"	"	"	A8	Place swamping tool from terminal A of L31 to chassis. Adjust A8 for maximum deflection.
27.	"	"	"	"	"	A5	Place swamping tool from terminal D of L32 to chassis. Adjust A5 for maximum deflection.
28.	"	"	"	"	"	A6	Place swamping tool from terminal A of L32 to chassis. Adjust A6 for maximum deflection.
29.	"	"	"	"	"	A3	Place swamping tool from terminal D of L33 to chassis. Adjust A3 for maximum deflection.
30.	"	"	"	"	"	A4	Place swamping tool from terminal A of L33 to chassis. Adjust A4 for maximum deflection.

ALIGNMENT OF BFO.

Alignment of the beat frequency oscillator should be performed after all other frequency controlling elements are aligned. Connect the signal generator to the antenna terminals. Set the crystal filter knob to position 4. With the receiver in AVC position tune in the signal from the generator to exact crystal filter frequency as indicated by a sharp rise in "S" meter reading. Set the BFO pitch control to center. Turn the receiver to CW position and adjust the BFO trimmer A52 for zero beat. If the knobs have been removed the BFO pitch knob may have been incorrectly replaced. It should be at center when its associated tuning capacitor is at half capacity setting.

To check the position of the capacitor proceed as follows: Connect the signal generator to pin 7 of V4. Set the receiver to CW position and rotate the BFO pitch control 180 degrees to each side of zero. The tone should change an equal amount each side of zero. Failure to do so indicates incorrect setting of the knob on the shaft. To correct this, rotate the control until the highest pitch obtainable is found, indicating that the capacitor plates are all in or all out. Loosen the BFO pitch control set screw, turn the knob 90 degrees in either direction, and tighten the set screw. Set the BFO control at zero and again adjust A52 for zero beat. It is possible that the knob is 180 degrees from the correct setting on the shaft. To check this possibility loosely couple the signal generator to the antenna terminals, set the signal at some 100 KC point (as 3700 KC) and, with the receiver on CW position and the BFO pitch control at zero, tune to zero beat. Rotate the BFO knob to +1. Retune the receiver to zero beat. If the new dial setting is 1 KC less than before the BFO knob is on the shaft correctly. If the receiver dial indicates 1 KC more the BFO knob should be rotated 180 degrees on the condenser shaft.

## RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6AK5	550KΩ	120Ω	0Ω	.1Ω	†3.6KΩ	†34KΩ	120Ω		
V 2	6BE6	470KΩ	560Ω	0Ω	.1Ω	†3.6KΩ	†11KΩ	22KΩ		
V 3	12AT7	†3.6KΩ	0Ω	330Ω	0Ω	0Ω	†3.6KΩ	4.7KΩ	330Ω	.1Ω
V 4	6BE6	100KΩ	470Ω	0Ω	.1Ω	†2.6KΩ	†33KΩ	1Ω		
V 5	6BA6	330KΩ	0Ω	0Ω	.1Ω	†32KΩ	†32KΩ	0Ω		
V 6	6BA6	150KΩ	0Ω	.1Ω	0Ω	†14KΩ	†43KΩ	0Ω		
V 7	6BA6	210KΩ	0Ω	0Ω	.1Ω	†2.6KΩ	†28KΩ	150Ω		
V 8	6BA6	210KΩ	0Ω	0Ω	.1Ω	†2.6KΩ	†18KΩ	0Ω		
V 9	6BA6	210KΩ	180Ω	0Ω	.1Ω	†2.6KΩ	†47KΩ	180Ω		
V 10	6AL5	100KΩ	94KΩ	0Ω	.1Ω	0Ω	400Ω	400Ω		
V 11	6BA6	150KΩ	0Ω	0Ω	.1Ω	†110KΩ	0Ω	†43KΩ	.2Ω	
V 12	12AX7	190KΩ	690KΩ	2.6KΩ	0Ω	0Ω	†220KΩ	0Ω	6.8KΩ	.1Ω
V 13	6AL5	1Meg	INF	0Ω	.1Ω	INF	INF	47KΩ		
V 14	6AL5	10KΩ	■0Ω	0Ω	.1Ω	INF	INF	INF		
V 15	6AQ5	100KΩ	0Ω	0Ω	.1Ω	†390Ω	†370Ω	100KΩ		
V 16	0A2	†2.6KΩ	0Ω	INF	0Ω	†2.6KΩ	INF	0Ω		
V 17	5Y3GT	INF	16KΩ	INF	†118Ω	†2.6KΩ	†120Ω	INF	16KΩ	

ALL MEASUREMENTS TAKEN IN "AM" POSITION UNLESS NOTED

BAND SWITCH 80 METERS POSITION

M13 IN "ON" POSITION

M15 AT ZERO POSITION

M17 AT LIMITER POSITION

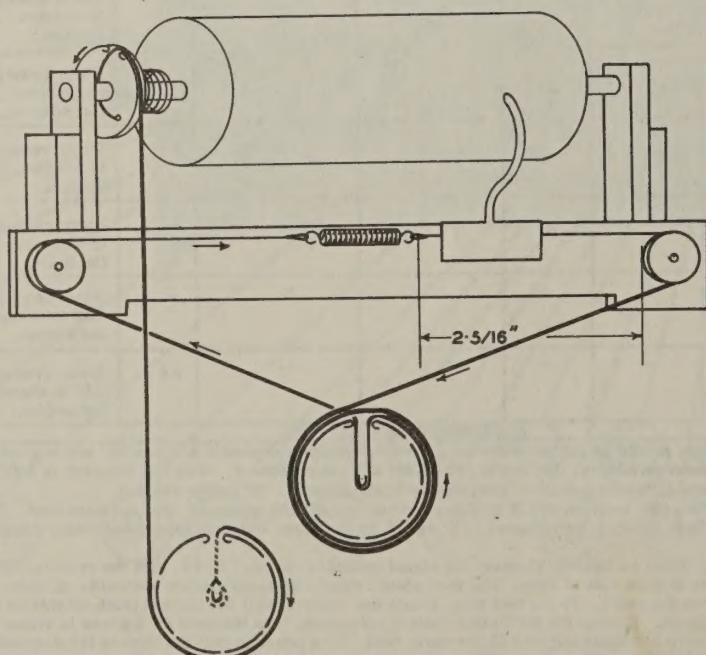
RF GAIN CONTROL FULLY CLOCKWISE

† MEASURED FROM PIN 8 OF V17

■ MEASURED IN "CW" POSITION

† MEASURED FROM -50VDC LINE

## TUNING CONTROL FULLY CLOCKWISE



## DIAL CORD STRINGING